The Family Programmer

Summer 1983 FORMERLY *TI SOURCE & LOGO NEWS* $2.00

New Products

New Texas Instruments Home Computer Products Announced

TI has announced a whole new look for its 99/4A Home Computer and peripherals. Although the 99/4A may look a little different in its new gray color, it will work exactly the same as the older black and silver models.

Contents

New Products 1
Letter From the Editor 2
The Beginning Programmer 3
The Junior Programmer 8

Texas Instruments has announced the coming availability of a new group of products for their CC-40 Compact Computer and the 99/4A. As they do every year, these announcements were made in time for the Summer Consumer Electronics show, held this year in Chicago over the first weekend in June.

CC-40 and Hex-bus™ Peripherals

The CC-40, for those of you who haven't heard about it yet, is a truly portable computer that can fit in a briefcase and can perform tasks like a desktop computer. It has an easy-to-use typewriter-style keyboard and a suggested retail price of $249.95.

For 99/4A owners, the CC-40 is good news because the Hex-bus™ peripherals made to work with it will also work with your 99/4A. These peripherals include a Wafertape storage system that uses tiny cassettes. Unlike conventional cassettes, the Wafertapes

Continued on page 10

The Family Programmer

Summer, 1983

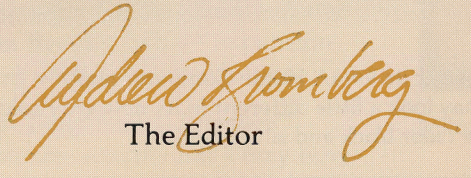
Dear Reader,

Welcome to the first issue of the FAMILY PROGRAMMER. Beginning in September, the FAMILY PROGRAMMER will be coming to your home every month to help you learn and get the most out of your TI 99/4A home computer. We'll also bring you news on new Texas Instrument products as they are announced.

In our first issue, besides our product news which begins on the front page, we will be introducing two of the three programming sections which will be the mainstay of our publication. *The Beginning Programmer* column is dedicated to those of you who have never tried programming before but want to learn. *The Junior Programmer* column, which will be introduced in our fall issue, we expect to have some pretty fancy goings on that will challenge even the most advanced programmers.

Because we know that most families who are buying Texas Instruments computers are buying them in order to learn about computing, we feel there is a need for a new publication that is dedicated to teaching programming to all members of the family. If you have never tried programming, you will be surprised at how rewarding and entertaining it can be. We are here to help you get started—and for those of you who already have—to keep you going and continue learning. That's what the FAMILY PROGRAMMER is all about.

We'd like very much to hear from you. Please write and tell us what you think of this our first issue, and what you'd like to learn more about. In the meantime, enjoy our first issue and happy programming.



The Editor

The Family Programmer is published by The Family Programmer Company, 34 Maple Avenue, Armonk, New York 10504. Address editorial correspondence to Editor- in-Chief, Andrew Bromberg.
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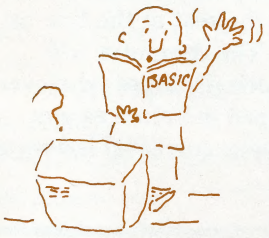
The Beginning Programmer

Although the examples used to teach programming in this column are often chosen to appeal to children, it is really written for anyone who has never tried to program a computer before. You will need no extra hardware to use this section—just your 99/4A hooked up to your TV or a color monitor. Don't expect to do even the simplest of things without running into problems. If you have the right attitude and try and use your head to solve the problems, you will learn quickly.

Learning how to program in BASIC is going to take a great deal of patience. If any of your friends or relatives have told you that programming in BASIC (or any computer language, for that matter) is easy, don't listen. They have just forgotten how difficult it was for them in the beginning. Just



imagine going to a foreign country where you don't speak or read the language. the simplest things become hard to do, and the first 24 hours of your visit can become very frustrating and confusing. But if you don't hop on the next plane for home, things begin to fall into place very quickly. Pretty soon, you're enjoying your new experience and learning about a whole new world. That's how it is with programming. Don't be discouraged. Have patience and a positive attitude, and before long you will be on your way.

Lesson 1

There is no better way to learn how to program than to just jump in and try. So get a pencil and paper, sit down in front of your TI computer and let's begin.

BASIC COMMANDS YOU WILL LEARN

PRINT	**RUN**
CALL CLEAR	**NEW**
INPUT	**LIST**

Imagine you have just come home from school. No one is at home, and you want to play at a friend's house. You decide you had better leave a message for your mother, so she won't worry when she comes home and you're not there.

Instead of writing a note with a pencil and paper, let's try using the computer to leave your message. The simplest way to do this, of course, would be just to type a note on the screen.

Turn on your computer and read the message on the screen that Texas Instruments has written to you. It says "Ready-Press any key to begin", press the key and see what happens.

Your screen should look like this:

```
TEXAS INSTRUMENTS
HOME COMPUTER
PRESS
1 FOR TI BASIC
```

Go ahead and press 1. Now your screen will look like this:

```
TI BASIC READY
>■
```

Type in: I went to Bob's house (you can type in your own friend's name, in place of Bob). To type an apostrophe you must hold down the FCTN key and hit the O.

If you didn't make any typing errors, your screen should look like this.

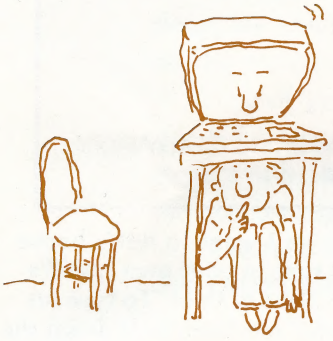
```
TI BASIC READY
>I WENT TO BOB'S HOUSE■
```

If you did make a mistake with your typing, look at box number 1 now to see how to correct it. If not, let's continue. The little black blinking box at the end of your sentence is called a cursor. Its job

is to follow you around, so you always know where you are on the screen.

Now if you're anything like me, you won't be happy with the way the message on your screen looks. First of all, it is way at the bottom of the screen. Second, it is cluttered up with a blinking cursor, the words "TI BASIC READY" and a little pointer which tells you what line you're on. Here's how to clean it up:

1. Press the enter button and see what happens. The computer prints "Incorrect Statement" under your message. Does the computer know that you haven't gone to Bob's house, but that you're really sitting right there in front of it?



NO, of course not. The computer has printed "Incorrect Statement" because you have just given it a command that has no meaning to it in computer language. For now, let's ignore the computer's discouraging word and move on.

2. Type in the words: CALL CLEAR and then press the ENTER key. Now your screen should look like this:

```
>■
```

CALL CLEAR is a BASIC language command. It tells the comuter to clear the screen and get ready to process new information.

Box #1

As long as the cursor (that's the little black square) is still blinking at the end of your sentence, all you have to do is hold down the FUNCTION key and hit the S key until you come to your mistake. Then retype the rest of the line correctly. The computer will automatically erase whatever was typed in before as you enter your corrected letters and words.

3. Now type in your message to Mom:
I WENT TO BOB'S HOUSE.

Your message is still at the bottom of the screen but it's rid of some of the clutter we had the first time you entered it.

4. To raise your message on the screen, hold down the space bar and see what happens.

If you held down the space bar, you will have seen the cursor running along the screen and jumping to a new line when it reached the end of it's journey on the screen's right edge. Each time the cursor started a new line, your message moved up one line. This movement of messages or input on the screen is called SCROLLING. The 99/4A will scroll only four lines. To type in additional information, you must push the ENTER key, otherwise the cursor will just sit blinking at you in the lower right corner.

Up until now we haven't been doing any real programming, however we've still learned a few things which will help us to write a program shortly. You've learned to use the FUNCTION (FCTN) key to type an apostrophe. This key has many more uses, some of which you will see later. You've learned how to use the ENTER key, and you've learned the BASIC command CALL CLEAR to clear the screen. You've also learned a definition of SCROLLING.

There is still a little more to learn about the computer before we begin to write an actual program. So let's not waste time. Type the CALL CLEAR command into the computer to clear the screen. (Don't forget to press the ENTER key after typing CALL CLEAR. This is the only way the computer knows you have finished telling it what you want it to do. If you don't press the key the computer will do nothing except wait for you to give it more instructions. Now that your screen is clear, type in the following:
PRINT "I WENT TO BOB'S HOUSE"

To type quotation marks on the 99/4A you must hold down the FCTN key and hit the "P." Now press ENTER and see what happens. Your screen should like like this:

```
> PRINT "I WENT TO BOB'S HOUSE
  "
  I WENT TO BOB'S HOUSE
>■
```

The computer did exactly what you told it to do—it printed I WENT TO BOB'S HOUSE on the next line.

PRINT is another BASIC command. It instructs the computer to display on the screen whatever you put between a pair of quotation marks. In this instance you are using the computer in what is called the

IMMEDIATE MODE, because the computer immediately executes your PRINT command.

Now try using the PRINT command without quotation marks and see what happens. Type: PRINT I WENT TO BOB'S HOUSE. Press the ENTER key. The words INCORRECT STATEMENT should now be on your screen. We've seen this before but now it's time to explain what it means.

The BASIC programming language has a very limited vocabulary. The computer can recognize only a very few words, and these words must be used according to very fixed rules. If you break a rule, the computer gets confused. Leaving out the quotation marks in a PRINT statement confuses the computer. It reads your entire message; finds it meaningless, and then tells you so by displaying INCORRECT STATEMENT. The computer has other surprise messages for you when you make other types of errors. But we will discover these later.

Lesson 2

To write a real program, we have to change the way we give instructions to the computer.

Here is the computer instruction we just tried in IMMEDIATE MODE:

PRINT "I WENT TO BOB'S HOUSE"

Now here is the same instruction in PROGRAMMING MODE:

10 PRINT "I WENT TO BOB'S HOUSE"

The only difference between these two statements, is the addition of the LINE NUMBER 10 in the PROGRAMMING mode. The LINE NUMBER tells the computer to wait for another command before it executes your instruction. If you have more than one instruction in your program—as most programs do—the LINE NUMBER also tells the computer in what order to execute your instructions.

Try typing in this:

10 PRINT "I WENT TO BOB'S HOUSE"

(Press ENTER before typing the next line.)

20 PRINT "I CAME HOME"

Be sure to press ENTER again after typing LINE NUMBER 20. Now type the BASIC command RUN and then press ENTER. The RUN command tells the computer to execute your program. Your screen should look like this:

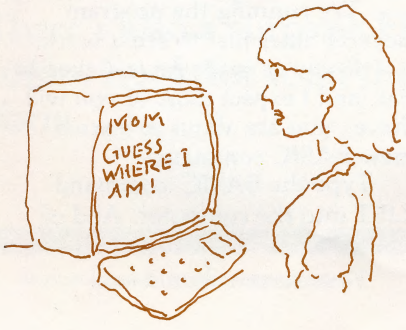
```
>10 PRINT "I WENT TO BOB'S HO
  USE"
> 20 PRINT "I CAME HOME"
> RUN
  I WENT TO BOB'S HOUSE
  I CAME HOME

  ** DONE **
>■
```

Your TI computer prints ** DONE ** to let you know it has finished doing your program. The cursor reappears below this message, blinking away to tell you it is ready for more instructions.

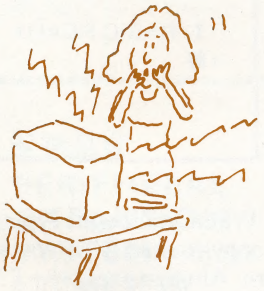
Now let's go back to our problem of leaving a message for Mom and make it a little more complicated. Instead of just leaving the message on the screen, let's leave an instruction, which if Mom follows will enable her to see your message. Supposing when your mother arrives home she reads the following on your computer video display:

MOM, PRESS ENTER FOR A MESSAGE



Mom reads the message and presses the ENTER key. Suddenly, the screen goes blank and then your message appears:

I WENT TO BOB'S HOUSE.



The rest of this column will teach you to write a real computer program that will do exactly what I have just described.

But first let me show you the entire program. Here it is:

```
 10 CALL CLEAR
 20 PRINT "DEAR MOM,"
 30 PRINT
 40 PRINT "PRESS ENTER FOR"
 50 PRINT
 60 PRINT "A MESSAGE"
 70 PRINT
 80 PRINT
 90 INPUT A$
100 CALL CLEAR
110 PRINT
120 PRINT "I WENT TO BOB'S HOUSE."
130 PRINT
140 PRINT
150 PRINT
160 PRINT
170 PRINT
180 END
```

This may look very complicated to you at first, but is really quite a simple program. And you have already learned all but one of the BASIC commands used to make it.

The best way to become more familiar with this program is to type it into your computer. But before you do, type in the command NEW (and don't forget

to press ENTER). As you will see, this command clears the screen. It also erases your old program from the computer's memory and gets ready for your NEW one. Your screen should look like this:

```
TI BASIC READY
>■
```

When you begin typing, be sure to copy it exactly as you see it here. Always press the ENTER key after completing a line. And don't forget the quotation marks, wherever they appear.

Now that you have it all typed in, type the RUN command and press ENTER.

After entering the RUN command your screen should look like this:

```
DEAR MOM,
PRESS ENTER FOR
A MESSAGE
? ■
```

Mom reads the message and presses the ENTER key. Suddenly, the screen goes blank and then your message appears:

I WENT TO BOB'S HOUSE.

It also will have turned green. The TI computer will turn your screen green whenever it is executing a program. When it is finished, the color goes back to the normal blue. If your screen doesn't look like what we just described, then you probably have made a mistake. To learn how to correct it, look at Box #2.

Assuming that everything is working fine now, take a look at the screen and pretend you are your Mom. What should you do? That's right. Press the ENTER button and see what happens.

If you have entered the entire program correctly, you should now be looking at a blue screen with the following written on it:

```
I WENT TO
BOB'S HOUSE.

**  DONE  **
>■
```

If it doesn't look like this, you have probably made a mistake somewhere. Take a look at Box #2 to see how to correct it and try again.

Try running the program several times just to see it work.

If you've made no mistakes so far (and I expect most of you will have), you are about to learn a new BASIC command.

Type the BASIC command LIST into the computer. And of course press ENTER.

Your screen should look like this:

```
LIST
 10 CALL CLEAR
 20 PRINT "DEAR MOM,"
 30 PRINT
 40 PRINT "PRESS ENTER FOR"
 50 PRINT
 60 PRINT "A MESSAGE"
 70 PRINT
 80 PRINT
 90 INPUT A$
100 CALL CLEAR
110 PRINT
120 PRINT "I WENT TO BOB'S
    HOUSE."
130 PRINT
140 PRINT
150 PRINT
160 PRINT
170 PRINT
180 END
>■
```

The LIST command will display your entire program on the screen. Compare what appears on your screen to what is shown above. Go over each line carefully. If you find a mistake in a line, retype the entire line including the line number. Then press ENTER. If you give your computer the

Box #2

To check your program for errors, you will have to learn a new BASIC command. The command is LIST. Try typing LIST (and then press ENTER) and see what happens. The entire program should now be on your screen. Check your screen against the program as it appears in this magazine. Look over each line carefully. Remember the computer is hard to please. Everything must be perfect. Check all the line numbers. Check the spelling of PRINT on all lines. See if you have left out any quotation marks. After you find your error, retype the line correctly - including the line number. Now give the LIST command again. The computer will automatically insert your retyped line in place of the incorrect one. Check the entire program again. If you're satisfied that everything is okay, RUN it again (type in RUN and press ENTER). If it still doesn't work, follow these instructions again until you get it perfect. Be prepared to have plenty of patience, and you will get it right!

MICRO COMPUTERS CORPORATION

$50 REBATE

From Texas Instruments on purchase of TI-99/4A

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FREE SPEECH SYNTHESIZER

with the purchase of any six Command Modules or two libraries or three Command Modules and the Entertainment Value Pack.

From June 1, 1983 to January 31, 1984.

ENTERTAINMENT PACK

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- Connect Four
- Adventure
- Blasto
- Hangman
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Suggested Price - $99.95
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TI SHOPPER

On the following pages, you'll find a complete selection of Texas Instruments home computer hardware, software, and accessories at low, low prices. And we have third-party 99/4A software too.

Everything you need for your TI home computer is here. You don't even have to leave your chair to do your shopping. Just select the items you want. Fill out the handy order form on the last page of the catalog, and mail it in with your check, money order, or Visa or Mastercard number. If you prefer, you can call your order in and charge it to your credit card.

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- **PHP1220 RS-232 Card**
- **PHP1240 Disk Controller Card**
- **PHP1250 Disk Drive**
- **PHP1260 Memory Card**
- **PHP1270 P-Code Card**
- **PHM3111 TI Writer**
- **PHM 3113 Microsoft Multiplan**

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VARIETY PACK

- Beginning Basic Tutor
- Markets Simulation
- Oldies But Goodies I
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Suggested Price - $49.95
Our Price - $43.00
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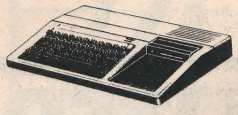
All prices are subject to change without notice.

TI MICRO COMPUTERS CORPORATION

COMPUTER HARDWARE



Computers

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHC004A	TI-99/4A Home Computer	$225.00	[1]$99.00
CC-40	Compact Personal Computer	249.95	229.00

Peripherals

PHP1200	Peripheral Expansion System	$249.95	[2]$180.00
PHP1220	RS-232 Card	174.95	131.00
PHP1240	Disk Controller Card	249.95	187.00
PHP1250	Expansion System Disk Drive	399.95	299.00
PHP1260	Memory Expansion Card	299.95	225.00
PHP1270	P-Code Card (32K Ram Req)	249.95	187.00
PHP1280	Pascal Development System (Incls. PHP1270, PHD5063, 5064, 5065)	499.95	375.00
PHP1290	Video Controller (PHA2310, PHA2320 or PHA2330 Req)	399.95	299.00
PHP1300	Hexbus Interface (99/4A Only)	59.95	49.00
PHP1500	Sold State Speech Synthesizer	99.95	85.00
PHP1600	Telephone Coupler (RS-232 Req)	199.95	150.00
PHP1850	Disk Memory Drive	499.95	385.00
PHP2500	TI Impact Printer	750.00	549.00
MCP1903	Epson MX-80 Printer	525.00	[3]399.00
MCP1904	Epson MX-80F/T Printer-RG Paper	635.00	[3]469.00
MCP1906	Epson MX-100 136 Column Printer	895.00	[3]680.00
MCP1930	Epson FX-80 160 CPS	749.00	[3]599.00
PHP2700	Program Recorder (Incls. PHA2622)	69.95	59.00
MCC2001	Panasonic Cassette Tape Recorder	59.50	50.00
PHA4100	10" Color Monitor (TI)	399.95	338.00
MCA4010	10" Color Monitor (Panasonic)	399.95	318.00
MCA4020	10" Color Monitor and TV (Panas.)	419.95	358.00
MCA4030	13" Color Monitor (Panasonic)	460.00	369.00

Hexbus™ Interface Peripherals

HX1000	Printer/Plotter 4 Color-Rechargeable Batteries	$200.00	$170.00
HX2000	Wafertape Digital Tape Drive	140.00	119.00
HX3000	RS-232 Interface (Serial)	100.00	85.00
HX3000/P	RS-232 Interface with Parallel Interface	125.00	106.00

Optional Accessories

MCA0004A	Hard Plastic Dust Cover (99/4A)	$10.95	$8.95
PHP1100	Wired Remote Controllers (Pair)	34.95	28.00
MCF0001	Furniture--Basic Mobile Desk	162.00	139.00
MCF0002	Furniture-Printer Desk	142.50	121.00
MCF0003	Furniture-Monitor Shelf	102.00	87.00
MCF0004	Furniture-Pedestal W/Two Trays	71.00	60.00
MCF0005	Furniture-10 Outlet Mngmt Tray	84.00	71.00
MCG0001	Six Port Outlets W/6 Ft. Hvy Crd	18.95	16.00
MCG0002	6 Outlet Track With Circuit Breakers and On/Off Light & Switch	29.95	26.00
MCG0003	9 Outlet Track With Circuit Breakers and On/Off Light & Switch	$33.95	$30.00

Cables

PHA2000	Dual Cassette Cable	$14.95	$13.50
PHA2010	Monitor Cable	19.95	17.00
PHA2020	Audio Adapter (Headphone Jack)	19.95	17.00
PHA2100	R.F. Modulator (TV Adapter)	49.94	30.00
PHA2310	Panasonic Video Controller Cables	99.95	85.00
PHA2320	Sony Video Controller Cables	99.95	85.00
PHA2330	Pioneer Video Controller Cables	99.95	85.00
PHA2620	Serial RS-232 Y-Cable	34.95	33.00
MCP1911	Serial Y-Cable 2 10 Ft Cables	59.00	49.00
PHA2621	Parallel Printer Cable	24.95	23.00
MCP1912	Parallel 10 Ft. Printer Cable	57.00	47.00
PHA2622	99/4A Single Cassette Cable	14.95	13.00
PHA2623	External Disk Drive Cable	9.95	9.00
PHA2624	Serial Printer Cable	29.95	28.00
MCP1907	Serial Printer Male/Male Cable	35.00	30.00
PHA2625	Internal Disk Drive Cable	9.95	9.00

Cassette, Diskette Accessories

PHA2640	Cassette Tapes	$3.95	$3.50
MCC2002	50-Ft Length C-10 Cassette Tapes	1.00	.90
MCC2003	100-Ft Length C-20 Cassette Tapes	1.50	1.30
PHA2650	Blank Floppy Diskettes-4	19.95	18.00
MCD1801	Maxell SS,SD Diskette	5.50	4.90
MCD1802	Verbatim SS,DD Diskette	5.95	5.30
MCD1810	Diskette Head Cleaning Kit	12.50	11.00
PHA2660	Cartridge Storage Cabinet	14.95	13.00
MCK2660	Command Module Plastic Storage Unit	12.95	12.00

Printer Accessories

PHA2670	Impact Printheads	$54.95	$49.00
PHA2671	Impact Printer Ribbons	14.95	14.00
PHA2672	Impact Printer Paper	19.95	18.00
MCP1905	Epson MX-80 Graftrax	65.00	61.00
MCP1908	Epson RS-232 Serial Int(4K Buff)	159.00	144.00
MCP1909	Epson RS-232 Serial Int(2K Buff)	115.00	98.00
MCP1910	Epson MX-80 Ribbons	15.00	14.00
MCP1914	Printer Paper-3,200 Sheets 15 Wt	36.00	31.00
MCP1915	Printer Paper-2,500 Sheets 20 Wt	35.00	30.00
MCP1916	Computer Labels-5,000 Single Labels	34.00	29.00
MCP1917	Computer Labels-10,000 Double Labels	68.00	58.00
MCP1918	Computer Paper,1,000 Sheets 15 Wt	22.50	20.00
MCP1919	Computer Paper-1,250 Sheets 20 Wt	22.50	20.00
MCP1921	Epson Stand-Wood Core	49.95	45.00

Hexbus™ Accessories

AC9201	AC Adaptor For Wafertape Tape Drive	$15.00	$14.00
WT50	50' Blank Wafertape Cartridge	8.00	7.00
WT25	25' Blank Wafertape Cartridge	7.00	6.50
WT10	10' Blank Wafertape Cartridge	6.00	5.50
WT05	5' Blank Wafertape Cartridge	5.00	4.50
PARA/KIT	Parallel Upgrade Kit (HX3000)	30.00	26.00

[1] -After $50.00 Rebate From Texas Instruments
[2] -Free With the Purchase of Any 3 of the Following: PHP1220, PHP1240, PHP1250, PHP1260, PHP1270, PHM3111, or PHM3113
[3] -Plus Free MC-Text Writer (MCD0037) (Req EB+32K)

SHOPPER

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
HXC36	36" I/O Cable with Hexbus Connector	$10.00	$ 9.00
PPHX1000	5 Pack Paper Rolls For HX1000	3.25	3.00
PEN1000CA	Pack of 3 Pens For HX1000 (R,B,&G)	4.00	3.75
PEN1000BL	Pack of 3 Black Pens For HX1000	4.00	3.75

Optional Hardware Accessories

MCP1920	TI 825 Receive Only Printer & Cable	$1780.00	$1692.00
MCP1921	TI 840 RO Printer	1200.00	1020.00
MCR0511	HEI Card Reader	1283.25	1199.00
MCR0521	Attendance Cards(500 Per Pkg)	12.95	11.00
MCR0522	Test Cards (400 Per Pkg)	35.95	31.00

Books, Manuals & Documentation

PHA2601	User's Reference Guide (Extras)	$9.95	$8.00
PHA2602	Beginning Basic Manual(TI-99/4A)	9.95	8.00
PHA2603	User's Reference Guide(TI-99/4A)	$ 9.95	$ 8.00
PHA2606	Creative Programming - Volume I	9.95	8.00
PHA2607	Creative Programming - Volume II	9.95	8.00
PHA2608	Creative Programming - Volume III	9.95	8.00
PHA2609	Creative Programming - Allstar PJT	9.95	8.00
PHA2611	Logo Curriculum Guide	49.95	43.00
PHA2612	Editor/Assembler Manual	14.95	13.00
PHA2613	Computer Awareness-Adults	6.95	5.90
PHA2614	Computer Awareness-Children	5.95	5.10
PHA2615	Programming Discovery In Logo	5.95	5.10
PHA2616	99/4A Technical Data Manual	14.95	12.70
PHA2617	Basic Programming For Adults	6.95	5.90
PHA2618	Programming Discovery In Basic	5.95	5.10
MCA0010	Introductory Logo Activity Packet	19.95	18.00
MCA0011	Logo Act. Folders-Turtle Elem.	9.95	9.00
MCA0012	Logo Act. Folders-Sprites Elem.	9.95	9.00
MCA0020	Programming Basic-Peckham	19.95	18.00
BK-100	Learn Basic Book (CC-40)	9.95	9.00
MCF0001	Basic Programming Coding Sheets	.20	.15

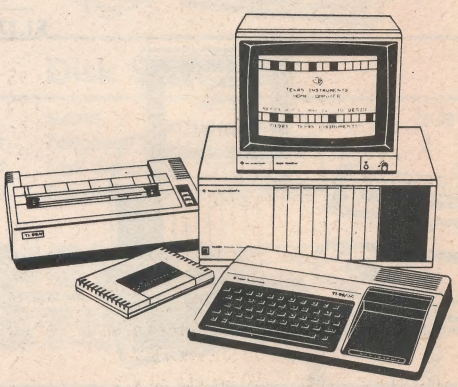
SYSTEMS

What do I need to run Logo? What do I need to do word processing? What equipment do I need for a disk storage system? Or a telephone communcations system?

In the following Systems section we have tried to answer these questions for you to simplify your shopping.

Start with your T.I. 99/4A and monitor (shown with each system but not included) and add the equipment indicated to build the system you want.

PRINTER SYSTEMS



Texas Instruments Printer System
(Tractor fed)

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
PHP2500	TI Impact Printer and Cable (Serial)	549.00
		$ 657.00

Epson MX-80 Printer System
(Tractor fed)

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
MCP1903	Epson MX-80 Printer	399.00
MCP1912	Parallel 10 Ft. Printer Cable	47.00
		$ 657.00

Epson MX-80 F/T Regular Paper Printer System
(Also includes tractor adaptor.)

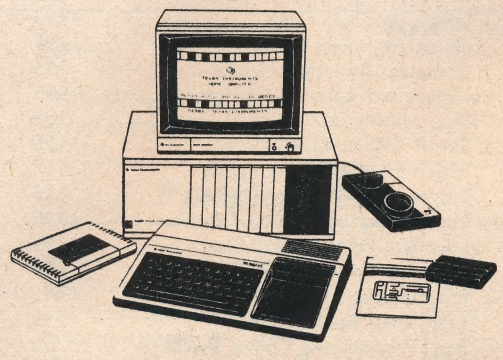
MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
MCP1904	Epson MX-80 Printer	469.00
MCP1912	Parallel 10 Ft. Printer Cable	47.00
		$ 727.00

Epson FX-80 Printer System (160 Character Per Second)
(Tractor fed. Optional sheet adaptor available.)

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
MCP1903	Epson FX-80 160 CPS Printer	599.00
MCP1912	Parallel 10 Ft. Printer Cable	47.00
		$ 857.00

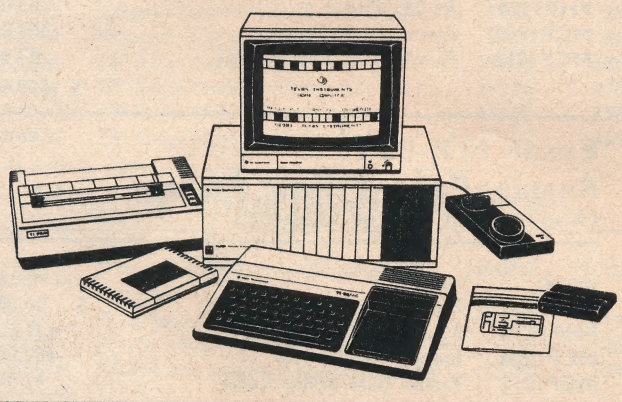
***The special discounted prices of the Peripheral Expansion system will vary with the system you choose.**

COMMUNICATIONS SYSTEMS



Telephone Communications System

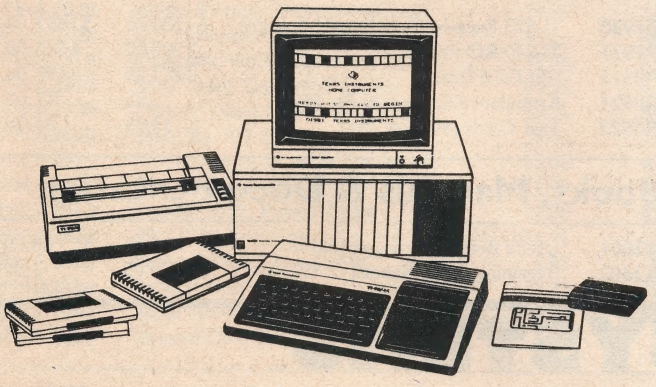
MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
PHP1600	Telephone Coupler (Serial)	150.00
PHM3035	Terminal Emulator II	42.00
		$ 403.00



Telephone Communications and Texas Instruments Printer System

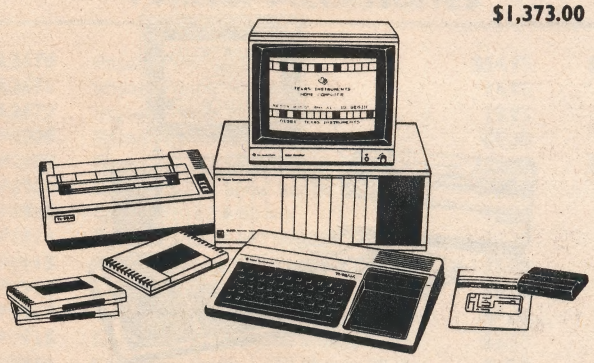
MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1220	RS-232 Card	131.00
PHP1600	Telephone Coupler (Serial)	150.00
PHP2500	TI Impact Printer and Cable	549.00
MCP1911	Serial Y-Cable Two 10 Ft. Cables	49.00
PHM3035	Terminal Emulator II	42.00
		$1,001.00

INFORMATION MANAGEMENT SYSTEMS



Word Processing System

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	Free
PHP1220	RS-232 Card	$ 131.00
PHP1260	Memory Expansion Card	225.00
PHP1240	Disk Controller Card	187.00
MCP1903	Epson MX-80 Printer	399.00
MCP1912	Parallel 10 Ft. Printer Cable	47.00
PHP1250	Disk Drive	299.00
PHM3111	TI Writer	85.00
		$1,373.00

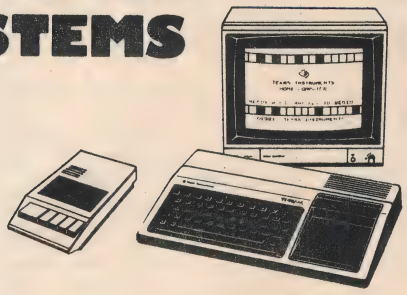


Multiplan System

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	Free
PHP1220	RS-232 Card	$ 131.00
PHP1260	Memory Expansion Card	225.00
PHP1240	Disk Controller Card	187.00
MCP1903	Epson MX-80 Printer	399.00
MCP1912	Parallel 10 Ft. Printer Cable	47.00
PHP 1250	Disk Drive	299.00
PHM3113	Microsoft Multiplan	85.00
		$1,373.00

***The special discounted prices of the Peripheral Expansion system will vary with the system you choose.**

STORAGE SYSTEMS

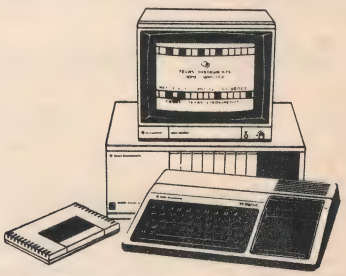


Texas Instruments Tape System

MODEL	NAME	OUR PRICE
PHP2700	Tape Recorder with Single Cassette Cable	$ 59.00

Panasonic Tape System

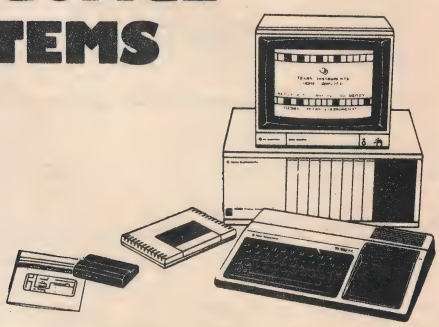
MODEL	NAME	OUR PRICE
PHA2000	Dual Cassette Cable	$ 13.50
MCC2001	Panasonic Cassette Tape Recorder	$ 50.00
		$ 63.50



Disk System

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 40.00
PHP1240	Disk Controller Card	187.00
PHP1250	Expansion System Disk Drive	299.00
		$ 526.00

LANGUAGE SYSTEMS

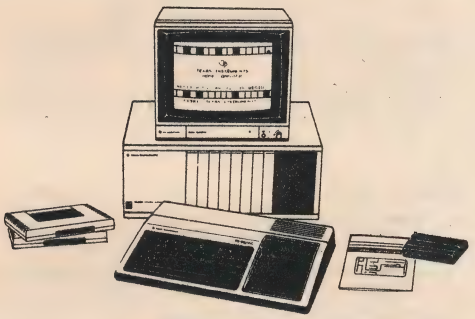


Logo System

LANGUAGE SYSTEMS-Cont'd

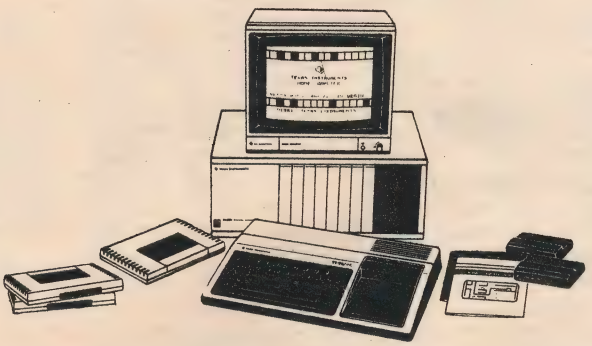
LOGO SYSTEM Cont'd

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	$ 80.00
PHP1260	Memory Expansion Card	225.00
PHM3109	TI LOGO II	99.00
		$ 404.00



Assembly Language System

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	Free
PHP1260	Memory Expansion Card	$ 225.00
PHP1240	Disk Controller Card	187.00
PHP1250	Expansion System Disk Drive	299.00
PHM3055	Editor/Assembler	39.00
		$ 750.00



Pascal System

MODEL	NAME	OUR PRICE
PHP1200	Peripheral Expansion System*	Free
PHP1260	Memory Expansion Card	$ 225.00
PHP1270	P-Code Card	187.00
PHP1240	Disk Controller Card	187.00
PHP1250	Expansion System Disk Drive	299.00
PHP5063	UCSD Pascal Compiler	115.00
PHD5065	UCSD P-System Editor/Filer/Utilities	68.00
		$1,081.00

***The special discounted prices of the Peripheral Expansion system will vary with the system you choose.**

TI MICRO COMPUTERS CORPORATION

TI 99/4A SOFTWARE

Education

Reading and Grammar

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
	Texas Instruments/Command Modules		
PHM3002	Early Learning Fun	$29.95	$25.00
PHM3003	Beginning Grammar	29.95	25.00
PHM3015	Early Reading (Speech)30100-1	54.95	46.00
PHM3043	Reading Fun (Speech)30102-8	54.95	46.00
PHM3046	Reading On 30104-4	54.95	46.00
PHM3047	Reading Roundup 30106-0	54.95	46.00
PHM3048	Reading Rally	54.95	46.00
PHM3082	Reading Flight	54.95	46.00
	Microcomputers Software/Diskette		
MCD0004	Match'em I, Match'em II & Racing Letters	$17.95	$17.00
MCD0023	Dan's Van(Short "A" Vowel Practice)	14.95	13.00
MCD0024	Gus' Tug(Short "U" Vowel Practice)	14.95	13.00
MCD0025	Big Sid's Ribs(Short "I" Practice)	14.95	13.00
MCD0026	Bev The Vet (Short "E" Practice)	14.95	13.00
MCD0027	Tod's Cod (Short "O" Vowel Practice)	14.95	13.00
MET0001	Verbs	14.95	13.00
MET0009	Identifying Complete Sentence	14.95	13.00
MED0016	Antonym Machine (Elementary)	14.95	13.00
MED0017	Homonym Machine (Elementary)	14.95	13.00
	Microcomputers Software/Cassette		
MCT0004	Match'em I, Match'em II & Racing Letters	$14.95	$14.00
MCT0023	Dan's Van (Short "A" Vowel Practice)	9.95	9.00
MCT0024	Gus's Tug (Short "U" Vowel Practice)	9.95	9.00
MCT0025	Big Sid's Ribs (Short "I" Practice)	9.95	9.00
MCT0026	Bev The Vet (Short "E" Practice)	9.95	9.00
MCT0027	Tod's Cod (Short "O" Vowel Practice)	9.95	9.00
MET0001	Verbs	9.95	9.00
MET0009	Identifying Complete Sentence	9.95	9.00
MET0016	Antonym Machine (Elementary)	9.95	9.00
MET0017	Homonym Machine (Elementary)	9.95	9.00

Mathematics

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
	Texas Instruments/Command Modules		
PHM3004	Number Magic	$19.95	$18.00
PHM3027	Add & Sub I (SPCH) 30200-8	39.95	33.00
PHM3028	Add & Sub II (SPCH) 30203-2	39.95	33.00
PHM3029	Multiplication I (SPCH) 30206-7	39.95	33.00
PHM3049	Division I 30209-1	39.95	33.00
PHM3050	Numeration I 30209-1	39.95	33.00
PHM3051	Numeration 2 30215-6	39.95	33.00
PHM3083	Computer Math Games II	39.95	33.00
PHM3084	Computer Math Games I	39.95	33.00
PHM3085	Computer Math Games III	39.95	33.00
PHM3086	Computer Math Games IV	39.95	33.00
PHM3088	Computer Math Games VI	$ 39.95	$33.00
PHM3090	Addition	39.95	33.00
PHM3091	Subtraction	39.95	33.00
PHM3092	Multiplication	39.95	33.00
PHM3093	Division	39.95	33.00
PHM3094	Integers	39.95	33.00
PHM3095	Fractions	39.95	33.00
PHM3096	Decimals	39.95	33.00
PHM3097	Percents	39.95	33.00
PHM3099	Laws of Arithmetic	39.95	33.00
PHM3100	Equations	39.95	33.00
PHM3101	Measurement Formulas	39.95	33.00
PHM3114	Alligator Mix	39.95	33.00
PHM3115	Alien Addition	39.95	33.00
PHM3116	Demolition Division	39.95	33.00
PHM3117	Dragon Mix	39.95	33.00
PHM3118	Minus Mission	39.95	33.00
PHM3119	Meteor Multiplication	39.95	33.00
	Texas Instruments/Diskettes		
PHD5006	Math Routine Library	$29.95	$22.00
PHD5031	Speak and Math (Spch. & PHM3035)	29.95	22.00
	Texas Instruments/Cassette		
PHT6006	Math Routine Library	$9.95	$8.00
PHT6031	Speak and Math (Speech and PHM3035 required)	14.95	13.00
	Microcomputers Software/Diskette		
MCD0007	Addition	$17.95	$17.00
MCD0008	Subtraction	17.95	17.00
MCD0009	Multiplication	17.95	17.00
MCD0010	Division	17.95	17.00
MED0002	Count'em (Kindergarten and 1st.)	14.95	13.00
MED0003	Bar Graph	14.95	13.00
MED0006	Direction and Distance (Primary)	14.95	13.00
	Microcomputers Software/Cassettes		
MCT0007	Addition	$12.95	$12.00
MCT0008	Subtraction	12.95	12.00
MCT0009	Multiplication	12.95	12.00
MCT0010	Division	12.95	12.00
MET0002	Count'em (Kindergarten and 1st.)	9.95	9.00
MET0003	Bar Graph	9.95	9.00
MET0006	Direction and Distance (Primary)	9.95	9.00

Spelling

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
	Texas Instruments/Command Module		
PHM3059	Scholastic Spelling-Level 3	$54.95	$42.00
PHM3060	Scholastic Spelling-Level 4	54.95	42.00
PHM3061	Scholastic Spelling-Level 5	54.95	42.00
PHM3062	Scholastic Spelling-Level 6	54.95	42.00
	Texas Instruments/Diskette		
PHD5030	Speak and Spell (Spch.)	$29.95	$22.00
	Microcomputers Software/Diskette		
MED0011	Spelling - 7 Programs (2nd Grade)	$54.95	$47.00
MED0012	Spelling - 7 Programs (3rd Grade)	54.95	47.00

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
MED0013	Spelling - 7 Programs (4th Grade)	$54.95	$47.00
MED0014	Spelling - 7 Programs (5th Grade)	54.95	47.00
MED0015	Spelling - 7 Programs (6th Grade)	54.95	47.00
	Microcomputers Software/Cassette		
MET0011	Spelling - 7 Programs (2nd Grade)	$49.95	$43.00
MET0012	Spelling - 7 Programs (3rd Grade)	49.95	43.00
MET0013	Spelling - 7 Programs (4th Grade)	49.95	43.00
MET0014	Spelling - 7 Programs (5th Grade)	49.95	43.00
MET0015	Spelling - 7 Programs (6th Grade)	49.95	43.00

Miscellaneous

	Texas Instruments/Command Modules		
PHM3005	Video Graphs	$19.95	$18.00
PHM3008	Video Chess	69.95	53.00
PHM3010	Physical Fitness	29.95	22.00
PHM3020	Music Maker	39.95	33.00
PHM3021	Weight Control and Nutrition	39.95	33.00
PHM3040	Logo (Req. 32K)	129.95	89.00
PHM3040	Logo (Spanish Req. 32K + Disk)	129.95	89.00
PHM3109	TI Logo II (Req. 32K)	129.95	89.00
PHM3064	Touch Typing Tutor	39.95	33.00
PHL7004	Music Educator	49.90	39.00
PHL7012	Foreign Language Instruction	149.95	127.50
	Texas Instruments/Diskette		
PHD5009	Music Skills Trainer	$29.95	$22.00
PHD5010	Mystery Melody	14.95	11.00
PHD5011	Computer Music Box	19.95	15.00
PHD5018	Market Simulation	19.95	15.00
PHD5023	Basketball Statistics (Extended BASIC Cartridge is required)	24.95	18.00
PHD5026	Bridge Bidding I	29.95	21.00
PHD5039	Bridge Bidding II	29.95	21.00
PHD5041	Bridge Bidding III	29.95	21.00
PHD5042	Spell Writer (Terminal Emulator II Cartridge and Solid State Speech™ Synthesizer are required)	29.95	22.00
PHD5068	Course Designer Authority System	199.95	150.00
	Texas Instruments/Cassette		
PHT6009	Music Skills Trainer	$9.95	$8.00
PHT6010	Mystery Melody	9.95	8.00
PHT6011	Computer Music Box	9.95	8.00
PHT6026	Bridge Bidding I	14.95	13.00
PHT6039	Bride Bidding II	14.95	13.00
PHT6041	Bridge Bidding III	14.95	13.00
PHT6042	Spell Writer (Spch + PHM3035)	14.95	13.00
PHT6070	TI Logo Sampler	24.95	21.00
	Microcomputers Software/Diskette		
MCD0013	Tester (you enter the test data)	$14.95	$13.00
MCD0028	Multiple Choice Questions	14.95	13.00
MCD0031	Tester (Hebrew version)	14.95	13.00
MED0004	Music Notes (Elementary)	14.95	13.00
NED0007	Clock (Primary)	14.95	13.00
MED0010	Making an Outline	14.95	13.00
	Microcomputers Software/Cassette		
MCT0013	Tester (you enter the test data)	$9.95	$9.00
MCT0028	Multiple Choice Questions	$9.95	$9.00
MCT0031	Tester (Hebrew version)	9.95	9.00
MET0004	Music Notes (Elementary)	9.95	9.00
MET0007	Clock (Primary)	9.95	9.00
MET0010	Making an Outline	9.95	9.00

Home and Business Management

	Texas Instruments/Command Module		
PHM3006	Home Financial Decisions	$29.95	$25.00
PHM3007	Household Budget Management (Data storage system is recommended)	39.95	33.00
PHM3012	Securities Analysis	39.95	33.00
PHM3013	Personal Record Keeping (Data storage system is recommended)	49.95	38.00
PHM3016	Tax/Investment Record Keeping (Disk system is required)	69.95	53.00
PHM3022	Personal Real Estate (Data storage system is recommended)	69.95	53.00
PHM3044	Personal Report Generator (Data storage system is recommended and PHM3013 is required)	39.95	33.00
PHM3111	TI Writer (32K Memory Expansion, RS232, Printer, Disk Drive and Controller are required) (Available for TI-99/4A only)	99.95	85.00
PHM3113	Microsoft™ Multiplan ™ (32K Memory Expansion, Disk Drive and Controller are required, RS-232 and Printer are recommended.) Available for TI99/4A only)	99.95	85.00
	Texas Instruments/Diskette		
PHD5001	Mailing List	$69.95	$47.00
PHD5003	Personal Financial Aids	19.95	15.00
PHD5018	Market Business Simulation	19.95	15.00
PHD5021	Checkbook Manager	19.95	15.00
PHD5022	Business Aids Library—Finance Management (Extended BASIC Cartridge is required)	39.95	28.00
PHD5024	Business Aids Library—Inventory Management (Personal Record Keeping or Statistics Cartridge and Printer are required)	69.95	47.00
PHD5027	Business Aids Library—Invoice Management (Personal Record Keeping or Statistics Cartridge and Printer are required)	69.95	47.00
PHD5029	Business Aids Library—Cash Management (Extended BASIC Cartridge is required)	39.95	28.00
PHD5038	Business Aids Library—Lease/Purchase Decisions (Printer is recommended)	69.95	47.00
PHD5077	Personal Tax Plan (Aardvark Software Inc.)(P-Code and 32K Memory Expansion are required, RS232 and Printer are recommended)	99.95	80.00

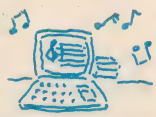
TI MICRO COMPUTERS CORPORATION

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHD5092	TI-Count General Ledgers (Extended BASIC Cartridge, RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	$99.95	$85.00
PHD5093	TI-Count Accounts Payable (Extended BASIC Cartridge, General Ledger Disk, RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	99.95	85.00
PHD5094	TI-Count Accounts Receivable (Extended BASIC Cartridge, General Ledger Disk, RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	99.95	85.00
PHD5095	TI-Count Payroll (Extended BASIC Cartridge, General Ledger Disk, RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	99.95	85.00
PHD5096	TI-Count Inventory (Extended BASIC Cartridge RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	99.95	85.00
PHD5097	TI-Count Mail List (Extended BASIC Cartridge, RS-232 and Printer are required, 32K Memory Expansion and Second Disk Drive are recommended)	99.95	85.00
	Texas Instruments/Cassette		
PHT6003	Personal Financial Aids	$14.95	$13.00
PHT6018	Market Business Simulation	14.95	13.00
PHT6038	Business Aids Library—Lease/Purchase Decisions (Printer is recommended)	59.95	49.00
	Microcomputers Software/Diskette		
MCD0037	MC Text Writer (EB+32K)	$39.95	$33.00
	Microcomputers Software/Cassette		
MCT0037	MC Text Writer (EB+32K)	$34.95	$29.00

Programming

	Texas Instruments/Command Module		
PHM3011	Speech Editor (Solid State Speech Synthesizer required)	$39.95	$33.00
PHM3026	Extended BASIC	99.95	75.00
PHM3035	Terminal Emulator II	49.95	42.00
PHM3040	Logo (requires 32K)	129.95	89.00
PHM3040	Logo/Spanish (requires 32K)	129.95	89.00
PHM3055	Editor/Assembler (Disk Drive, Controller and 32K Memory Expansion required)	49.95	39.00
PHM3058	Mini-Memory	99.95	80.00
PHM3109	TI Logo II (requires 32K)	129.95	89.00
	Texas Instruments/Diskette		
PHD5004	Programming Aids I	$14.95	$11.00
PHD5005	Programming Aids II	24.95	19.00
PHD5007	Teach Your BASIC	34.95	25.00
PHD5012	Programming Aids III (Extended BASIC Cartridge required)	19.95	16.00
PHD5019	Teach Yourself Extended BASIC (Extended BASIC Cartridge is required)	24.95	20.00
PHD5063	UCSD Pascal Compiler (32K Memory Expansion and P-Code Card required)	124.95	115.00
PHD5064	UCSD p-System Assembler/Linker (32K Memory Expansion and P-Code Card required)	99.95	77.00
PHD5065	UCSD p-System Editor/Filer/Utilities (32K Memory Expansion and P-Code Card required)	74.95	68.00
PHD5066	TI-PILOT (32K Memory Expansion and P-Code Card required)	29.95	25.00
PHD5067	Beginner's BASIC Tutor	29.95	25.00
PHD5068	Course Designer Authoring System	199.95	150.00
PHD5070	TI Logo Sampler	29.95	25.00
PHD5076	Text-to-Speech (English) (Solid State Speech Synthesizer, 32K Memory Expansion and Extended BASIC Cartridge required)	29.95	25.00
PHD5098	TI-Forth (Editor/Assembler Cartridge and 32K Memory Expansion required)	49.95	39.00
PHD5099	TI-Advanced Assembly Debugger (Editor/Assembler Cartridge and 32K Memory Expansion required)	29.95	25.00
	Texas Instruments/Cassette		
PHT6004	Programming Aids I	$9.95	$8.00
PHT6007	Teach Yourself BASIC	29.95	24.00
PHT6019	Teach Yourself Extended BASIC (Extended BASIC Cartridge required)	19.95	17.00
PHT6067	Beginner's BASIC Tutor	29.95	22.00
PHT6070	TI Logo Sampler	24.95	21.00

Other Applications



	Texas Instruments/Command Module		
PHM3014	Statistics (Data storage system is recommended)	$39.95	$33.00
PHM3045D	SMU Electrical Engineering Library (2 Diskettes included)	149.95	115.00
PHM3045T	SMU Electrical Engineering Library (10 Cassettes included)	149.95	115.00
	Texas Instruments/Diskette		
PHD5008	Electrical Engineering Library	$29.95	$22.00
PHD5011	Computer Music Box	19.95	15.00
PHD5013	Graphing Package	19.95	15.00
PHD5016	Structural Engineering Library	29.95	22.00
PHD5020	Music Maker Demonstration	14.95	11.00
PHD5044	AC Circuit Analysis	29.95	22.00

Entertainment

Texas Instruments/Command Module

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHM3008	Video Chess	$69.95	$53.00
PHM3009	Football	29.95	23.00
PHM3018	Video Games I	24.95	21.00
PHM3023	Hunt the Wumpus	24.95	21.00
PHM3024	Indoor Soccer	29.95	23.00
PHM3025	Mind Challengers	24.95	20.00
PHM3030	A-Maze-Ing	24.95	21.00
PHM3031	The Attack	39.95	33.00
PHM3032	Blasto	24.95	21.00
PHM3033	Blackjack and Poker	24.95	20.00
PHM3034	Hustle	24.95	21.00
PHM3036	ZeroZap	19.95	18.00
PHM3037	Hangman	19.95	18.00
PHM3038	Connect Four	19.95	17.00
PHM3039	Yahtzee	24.95	21.00
PHM3041D	Adventure (Pirate Adventure Diskette Game Included)	39.95	33.00
PHM3041T	Adventure (Pirate Adventure Cassette Game Included)	39.95	33.00
PHM3042D	Tunnels of Doom (2 Diskette Games Included)	59.95	49.00
PHM3042T	Tunnels of Doom (2 Cassette Games Included)	59.95	49.00
PHM3052	Tombstone City: 21st Century	39.95	33.00
PHM3053	TI Invaders	39.95	33.00
PHM3054	Car Wars	39.95	33.00
PHM3056	Alpiner (Solid State Speech™ Synthesizer is recommended)	39.95	33.00
PHM3057	Munch Man	39.95	33.00
PHM3067	Othello	39.95	33.00
PHM3110	Chisholm Trail	39.95	33.00
PHM3112	Parsec (Solid State Speech™ Synthesizer is recommended)	39.95	33.00
PHM3125	E.T. The Extra-Terrestrial (Solid State Speech™ Synthesizer is recommended)	$39.95	$33.00

Texas Instruments/Diskette

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHD5002	TI-Trek (Solid State Speech™ (Synthesizer is recommended)	$14.95	$11.00
PHD5010	Mystery Melody	14.95	11.00
PHD5015	Oldies But Goodies—Games I	19.95	15.00
PHD5017	Oldies But Goodies—Games II	24.95	18.00
PHD5025	Saturday Night Bingo (Solid State Speech™ Synthesizer is recommended)	29.95	22.00
PHD5037	Draw Poker (Extended BASIC Cartridge required)	24.95	21.00
PHD5043	Pirate Adventure (PHM3041D required)	29.95	22.00
PHD5046	Adventureland (PHM3041D required)	29.95	22.00
PHD5047	Mission Impossible (PHM3041D required)	29.95	22.00
PHD5048	Voodoo Castle (PHM3041D required)	29.95	22.00
PHD5049	The Count (PHM3041D required)	29.95	22.00
PHD5050	Strange Odyssey (PHM3041D required)	29.95	22.00
PHD5051	Mystery Fun House (PHM3041D required)	29.95	22.00
PHD5052	Pyramid of Doom (PHM3041D required)	29.95	22.00
PHD5053	Ghost Town (PM3041D required)	29.95	22.00
PHD5054	Savage Island I & II (PHM3042D required)	39.95	29.00
PHD5056	Golden Voyage (PHM3041D required)	29.95	22.00
PHD5057	Tombstone City (32K & EB)	19.95	17.00
PHD5058	TI Invaders (32K & EB)	19.95	17.00
PHD5060	Munch Man (32K & EB)	19.95	17.00

Texas Instruments/Cassette

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHT6008	Electrical Engineering Library	$9.95	$8.00
PHT6013	Graphing Package	9.95	8.00
PHT6016	Structural Engineering Library	9.95	8.00
PHT6044	AC Circuit Analysis	9.95	8.00
PHT6070	TI Logo Sampler	24.95	21.00
PHT6010	Mystery Melody	$9.95	$8.00
PHT6015	Oldies But Goodies—Games I	9.95	8.00
PHT6017	Oldies But Goodies-Games II	9.95	8.00
PHT6025	Saturday Night Bingo (Solid State Speech™ Synthesizer is recommended)	9.95	8.00
PHT6037	Draw Poker (Extended BASIC Cartridge required)	9.95	8.00

Adventure International Adventure Series

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHT6043	Pirate Adventure (PHM3041T required)	$29.95	$22.00
PHT6046	Adventureland (PHM3041T required)	29.95	22.00
PHT6047	Mission Impossible (PHM3041T required)	29.95	22.00
PHT6048	Voodoo Castle (PHM3041T required)	29.95	22.00
PHT6049	The Count (PHM3041T required)	29.95	22.00
PHT6050	Strange Odyssey (PHM3041T required)	29.95	22.00
PHT6051	Mystery Fun House (PHM3041T required)	29.95	22.00

Microcomputers Software/Diskette

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHD5068	Course Designer Authoring Package (Extended BASIC Cartridge required)	$199.95	$150.00
PHD5070	TI Logo Sampler	29.95	25.00
MCD0011	America	$9.95	$9.00
MCD0012	Piano Song	14.95	13.00
MCD0029	Moving Fish	9.95	9.00
MCD0030	Grid to Design Pictures	9.95	9.00

Microcomputers Software/Cassette

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
MCT0011	America	$4.95	$4.00
MCT0012	Piano Song	9.95	9.00
MCT0029	Moving Fish	4.95	4.00
MCT0030	Grid to Design Pictures	4.95	4.00

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHT6052	Pyramid of Doom (PHM3041T required)	$29.95	**$22.00**
PHT6053	Ghost Town (PHM3041T required)	29.95	**22.00**
PHT6054	Savage Island I & II (PHM3041T required)	39.95	**29.00**
PHT6056	Golden Voyage (PHM3041T required)	29.95	**22.00**
	Microcomputers Software/Diskette		
MCD0002	Jotto	$17.95	**$17.00**
MCD0003	PowWow & Corner Bound	17.95	**17.00**
MCD0004	Match'em I, Match'em II & Racing Letters	17.95	**17.00**
MCD0014	Fun House	14.95	**13.00**
MED0005	Trail West (Elm.-Adult)	14.95	**13.00**

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
	Microcomputers Software/Cassette		
MCT0002	Jotto	$14.95	**$13.00**
MCT0003	PowWow & Corner Bound	14.95	**14.00**
MCT0004	Match'em I, Match'em II & Racing Letters	14.95	**14.00**
MET0005	Trail West (Elem.-Adult)	9.95	**9.00**
	Funware/Command Module		
MCM0100	Hen House	$39.95	**$33.00**
MCM0101	Video Vegas	39.95	**33.00**
	ROMOX Command Module		
MCM0201	Ant Eater	$39.95	**$33.00**
MCM0202	Princess and Frog	39.95	**33.00**

Software Libraries

Texas Instruments/Command Module

PHL7001	**The Home Financial Manager** (Data storage is recommended.) •Home Financial Decisions, •Household Budget Management, •Personal Real Estate	$139.95	**$112.00**
PHL7002	**The Family Entertainer** •The Attack, •A-Maze-Ing, •Hunt the Wumpus	89.95	**70.00**
PHL7003	**The Elementary Educator** (Solid State Speech™ Synthesizer is recommended.) •Beginning Grammar, •Addition and Subtraction I, •Early Learning Fun	99.95	**85.00**
PHL7004	**The Music Educator** (Data storage system is recommended.) •Music Maker, •Music Skills Trainer (cassette)	49.90	**39.00**
PHL7005	**The Super Programmer** •Extended BASIC, •Teach Yourself Extended BASIC (cassette)	119.90	**96.00**
PHL7006	**The Scott, Foresman Speaking Math Teacher** (Solid State Speech™ Synthesizer is recommended.) •Addition and Subtraction I, •Addition and Subtraction II, •Multiplication I	119.85	**96.00**
PHL7007	**The Scott, Foresman Speaking Reading Teacher** (Solid State Speech™ Synthesizer is required.) •Early Reading, •Reading Fun	109.90	**90.00**
PHL7008	**The Speaking Scholastic Spelling Teacher** (Solid State Speech™ Synthesizer is required.) •Scholastic Spelling-Level 3, •Scholastic Spelling-Level 4, •Scholastic Spelling-Level 5, •Scholastic Spelling-Level 6	219.80	**185.00**
PHL7009	**The TI Arcade Game Series** •Tombstone City: 21st Century, •TI Invaders, •Car Wars	119.85	**96.00**
PHL7010	**The Milton Bradley Game Series** •Blasto, •Hustle, •ZeroZap, •Connect Four, •Yahtzee	114.75	**90.00**
PHL7011	**The Computer Introductory Package** (Data Storage system and Solid State Speech™ Synthesizer are recommended.) •Household Budget Management, •TI Invaders, •Multiplication I	119.85	**96.00**
PHL7012	**Foreign Language Instruction** (Developed by Westinghouse Learning Corp.) •Key to Spanish (Program Recorder is required)	149.95	**127.50**

MICRO
COMPUTERS
SOFTWARE

Selected Releases for the TI 99/4A

JOTTO

Ages 8 to Adult

cassette—$12.95, disk—$17.95 Here's hours of fun that will sharpen vocabulary skills and analytical powers of thinking. Discover the word the computer has chosen at random by making your own word guesses. The computer tells you how many letters in your word match the letters in its selection. An alphabet lets you keep score of correct and incorrect letters right on the screen. Choose from three skill levels—3, 4 or 5 letter words.

POWWOW & CORNERBOUND

Ages 8 to Adult

2-game cassette—$14.95, 2-game disk—$17.95 POWWOW challenges you to uncover the computer's random pick of a three-digit number in the fewest number of guesses. You select your own three-digit number, and the computer scores your choices with POWs and WOWs. A POW means you've guessed the right digit, but it's in the wrong place. A WOW means you've guessed the right digit, and it's in the right place. CORNERBOUND tests your eye-hand coordination and strategic planning abilities. Use your skill to guide the snake to the highest scoring corner and rack up the points. But be careful! Don't retrace your steps or crash into obstacles along the way or you'll lose the game.

MATCH 'EM I, MATCH 'EM II & RACING LETTERS

Ages 3 to 7

3-learning-game cassette— $14.95, 3-learning-game disk—$17.95 Preschoolers and lower elementary graders will enjoy playing MATCH 'EM I & II while being given excellent reinforcement in counting and number and letter recognition. Right answers are rewarded with a short tune and a happy face, and everyone gets a second chance. MATCH 'EM I concentrates on counting and capital letter and arabic numeral recognition, while MATCH 'EM II develops skills in roman numeral and lower case letter recognition. In MATCH 'EM II the computer displays the player's score in numbers and a multi-colored bar chart. Missed numbers and letters are pointed out for more practice. RACING LETTERS is a fast-moving game and another fun way to reinforce letter recognition for the younger set. The player chooses any two letters. Then the race begins. When the race is over, the computer asks "Which letter won?" and the child must hit the correct letter on the keyboard. This game is even more fun for two players. Each picks a letter and roots for their choice to win the race.

Ages 6 to 10

ADDITION, SUBTRACTION, MULTIPLICATION & DIVISION

Each package: cassette—$12.95, disk—$17.95

These four programs help elementary graders acquire good habits and sound mathematical skills in highly motivating practice sessions. Problems are presented one after another. A self-correcting mode makes sure the student will always come up with the right answer. A second mode of practice allows the player to make an error and review his mistakes. Rocket blast-offs and colorful kaleidoscopes reward the students in these programs. All four programs develop students' abilities to solve problems in a standardized, sequential approach and have been extremely well-received by the educational community.

Ages 8 to 12

Distributed by
KEYSTONE DISTRIBUTING COMPANY • 51 Morgan Drive • Norwood, MA 02062 (617) 769-3225 • Out of state call toll free (800) 343-9030

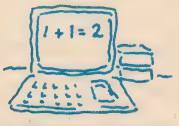
TI MICRO COMPUTERS CORPORATION

TI PLATO COURSEWARE

32K Memory Cartridge and PLATO Interpreter cartridge required for all PLATO Courseware Packages

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHM3122	PLATO Interpreter Cartridge (Includes Survey Diskettes)	$49.95	$42.00

Basic Skills
(Grades 1 through 8)



Mathematics

PHD5201	Numbers 0-9	$49.95	$42.00
PHD5202	Numbers 10-1000	49.95	42.00
PHD5203	Addition 1	49.95	42.00
PHD5204	Addition 2	49.95	42.00
PHD5205	Subtraction-Basic Concepts	49.95	42.00
PHD5206	Subtraction Skills	49.95	42.00
PHD5207	Multiplication-Basic Concepts	49.95	42.00
PHD5208	Multiplication Skills 1	49.95	42.00
PHD5209	Multiplication Skills 2	49.95	42.00
PHD5210	Division-Basic Concepts	49.95	42.00
PHD5211	Division Skills 1	49.95	42.00
PHD5212	Division Skills 2	49.95	42.00
PHD5213	Fractions-Terminology and Concepts	49.95	42.00
PHD5214	Addition and Subtraction	49.95	42.00
PHD5215	Multiplication and Division	49.95	42.00
PHD5216	Decimals-Terminology and Concepts	49.95	42.00
PHD5217	Ratio, Proportion and Percents	49.95	42.00
PHD5218	Geometry-Basic Concepts	49.95	42.00
PHD5219	Measurement	49.95	42.00

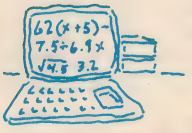
Reading

PHD5220	Basic Word Building	$49.95	$42.00
PHD5221	More Basic Word Building	49.95	42.00
PHD5222	Complex Word Building	49.95	42.00
PHD5223	Prefixes, Suffixes, and Compound Words	49.95	42.00
PHD5224	More Prefixes and Suffixes	49.95	42.00
PHD5225	Prefixes and Suffixes in Context	49.95	42.00
PHD5226	Selecting the Proper Words	49.95	42.00
PHD5227	Choosing the Proper Words	49.95	42.00
PHD5228	Dealing With Confusing Words	49.95	42.00
PHD5229	Word Meanings	49.95	42.00
PHD5230	Applying New Words	49.95	42.00
PHD5231	Understanding and Using New Words	49.95	42.00
PHD5232	Locating Basic Facts	49.95	42.00
PHD5233	More Basic Facts From Reading	49.95	42.00
PHD5234	Understanding What You Read	49.95	42.00
PHD5235	Remembering What You Read	49.95	42.00
PHD5236	Remembering More of What You Read	49.95	42.00
PHD5237	Interpreting What You Read	49.95	42.00
PHD5238	Understanding Basic Facts	49.95	42.00
PHD5239	Understanding More of What You Read	$49.95	$42.00
PHD5240	Describers and Conclusions	49.95	42.00
PHD5241	Different Types of Describers And Conclusions	49.95	42.00
PHD5242	Understanding The Whole Story	49.95	42.00
PHD5243	Fact and Non-Fact	49.95	42.00
PHD5244	Author's Purpose	49.95	42.00
PHD5245	Evaluating What You Read	49.95	42.00
PHD5246	Author's Purpose and Your Conclusions	49.95	42.00
PHD5247	Separating Fact From Opinion	49.95	42.00

Grammar

PHD5248	Nouns and Verbs	$49.95	$42.00
PHD5249	More About Nouns and Verbs	49.95	42.00
PHD5250	Pronouns	49.95	42.00
PHD5251	Making Nouns and Pronouns Agree	49.95	42.00
PHD5252	Adjectives and Adverbs	49.95	42.00
PHD5253	Prepositions, Conjunctions And Articles	49.95	42.00
PHD5254	Learning About Sentences	49.95	42.00
PHD5255	Phrases and Clauses	49.95	42.00
PHD5256	Subject and Verb Agreement	49.95	42.00
PHD5257	More About Sentences	49.95	42.00
PHD5258	More Than One	49.95	42.00
PHD5259	Word Confusion	49.95	42.00
PHD5260	Possessives	49.95	42.00
PHD5261	Capital Letters	49.95	42.00
PHD5262	Punctuation	49.95	42.00
PHD5263	Making Letters Look Right	49.95	42.00
PHD5264	Giving the Employer Correct Information	49.95	42.00

High School Skills
(Grades 9 through 12)

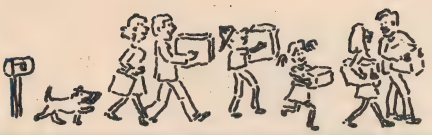


Writing

PHD5265	Spelling	$49.95	$42.00
PHD5266	Punctuation	49.95	42.00
PHD5267	Grammar 1	49.95	42.00
PHD5268	Grammar 2	49.95	42.00
PHD5269	Grammar 3	49.95	42.00
PHD5270	Diction	49.95	42.00
PHD5271	Sentence Structure	49.95	42.00
PHD5272	Logic and Organization	49.95	42.00

Mathematics

PHD5273	Basic Number Ideas 1	$49.95	$42.00
PHD5275	Math Sentences in One Variable 1	49.95	42.00
PHD5276	Math Sentences in One Variable 2	49.95	42.00
PHD5277	Math Sentences in Two Variables	49.95	42.00
PHD5278	Geometry	49.95	42.00
PHD5279	Measurement	49.95	42.00
PHD5280	Special Topics	49.95	42.00



Reading

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
PHD5281	Practical Reading 1	$49.95	$42.00
PHD5282	Practical Reading 2	49.95	42.00
PHD5283	General Reading 1	49.95	42.00
PHD5284	General Reading 2	49.95	42.00
PHD5285	Prose Literature 1	49.95	42.00
PHD5286	Prose Literature 2	49.95	42.00
PHD5287	Prose Literature 3	49.95	42.00
PHD5288	Poetry	49.95	42.00
PHD5289	Drama	49.95	42.00

Science

PHD5290	Physics 1	$49.95	$42.00
PHD5291	Physics 2	49.95	42.00
PHD5292	Chemistry	49.95	42.00
PHD5293	Earth Science 1	49.95	42.00
PHD5294	Earth Science 2	49.95	42.00
PHD5295	Biology 1	49.95	42.00
PHD5296	Biology 2	49.95	42.00
PHD5297	Biology 3	49.95	42.00
PHD5298	Biology 4	49.95	42.00

Social Studies

PHD5299	Geography	$49.95	$42.00
PHD5300	Economics 1	49.95	42.00
PHD5301	Economics 2	49.95	42.00
PHD5302	Behavioral Science 1	49.95	42.00
PHD5303	Behavioral Science 2	49.95	42.00
PHD5304	Political Science 1	49.95	42.00
PHD5305	Political Science 2	49.95	42.00
PHD5306	History 1	49.95	42.00
PHD5307	History 2	49.95	42.00
PHD5308	History 3	49.95	42.00

SCOTT, FORESMAN SOFTWARE/ TEACHER'S EDITIONS

Mathematics Courseware

(Command Module and Teacher's Guide included)

	Grades 1-3		
30200-8	Addition & Subtraction 1: Basic Facts Through 9 Courseware Pkg.	$44.95	$41.00
30203-2	Addition & Subtraction 2: Basic Facts Through 18 Courseware Pk.	44.95	41.00
30225-3	Addition & Subtraction 3: 2 Digit and 3 Digit Numbers	44.95	41.00
30212-1	Numeration 1: 3-Digits Courseware Pkg.	52.95	51.00
	Grades 3-6		
30206-7	Multiplication 1: Basic Facts Through 81 Courseware Pkg.	$44.95	$41.00
30222-9	Multiplication 2: 1 Digit Multipliers Courseware Pkg.	$52.95	$51.00
30209-1	Division 1: Basic Facts Through 81 Courseware Pkg.	52.95	51.00
30215-6	Numeration 2: 9-Digits Courseware Pkg.	52.95	51.00
30219-9	Fractions 1: The Meaning of Fractions	52.95	51.00
30237-7	Fractions 2: Like Denominations Courseware Package	52.95	51.00
30228-8	Decimals 1: Meaning, Addition and Subtraction Courseware Package	52.95	51.00
30243-1	Decimals 2: Multiplication Courseware Package	52.95	51.00

Mathematics With Objectives

(Command Module and Teacher's Guide included)

	Grades 3-8		
30447-7	Math Management Pkg.	$450.00	$383.00

Mathematics Brain Games

(Command Module and Teacher's Guide Included)

	Grades K-3		
30300-4	Frog Jump/Picture Parts	$75.95	$74.00
	Grades 3-6		
30303-9	Pyramid Puzzler/Star Maze	75.95	74.00
	Grades 6-8		
30306-3	Number Bowling/Space Journey	75.95	74.00

Reading Skills Courseware

(Command Module and Teacher's Guide Included)

	Grade 1		
30100-1	Early Reading Courseware Pk. 1A	$58.95	$54.00
30101-X	Reading Rainbows Courseware Pk. 1B	58.95	54.00
	Grade 2		
30102-8	Reading Fun Courseware Pk 2A	58.95	54.00
30103-6	Reading Cheers Courseware Pk 2B	58.95	54.00
	Grade 3		
30104-4	Reading On Courseware Pk 3A	58.95	54.00
30105-2	Reading Adventures Coursewre Pk 3B	58.95	54.00
	Grade 4		
30106-0	Reading Roundup Courseware Pk 4A	58.95	54.00
30107-9	Reading Trail Courseware Pk 4B	58.95	54.00
	Grade 5		
30108-7	Reading Rally Courseware Pk 5A	58.95	54.00
30109-5	Reading Power Courseware Pk 5B	58.95	54.00
	Grade 6		
30110-9	Reading Flight Courseware Pk 6A	58.95	54.00
30111-7	Reading Wonders Courseware Pk 6B	58.95	54.00

School Management Applications

(Command Module, reference manual, and a set of 5 diskettes included)

*30404-3	Student Date Recorder Package	$360.00	$276.00
30405-1	Attendance Recorder Package	360.00	276.00
30406-X	Class Data Recorder Package	275.00	213.00
*30407-8	Test Scorer Package	275.00	213.00

***Production of these packages has been temporarily postponed.**

TI MICRO COMPUTERS CORPORATION SHOPPER

MODEL	NAME	SUGGESTED RETAIL	OUR PRICE
30408-6	School Mailer Package	$ 350.00	$ 268.00
*30409-4	Mark Reporter Package	350.00	268.00
*30410-8	Class Scheduler Package	350.00	268.00
30411-6	Payroll Assistant Package	350.00	268.00
30412-4	Personnel Data Recorder Package	435.00	335.00
30413-2	Activity Accountant Package	275.00	213.00
30414-0	Accounting Assistant Package	465.00	361.00
30415-9	Salary Planner Package	465.00	362.00
30416-7	Property Manager Package	435.00	335.00
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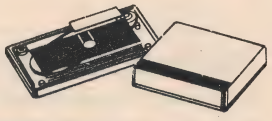
***Production of these packages has been temporarily postponed.**

TI CC/40 SOFTWARE



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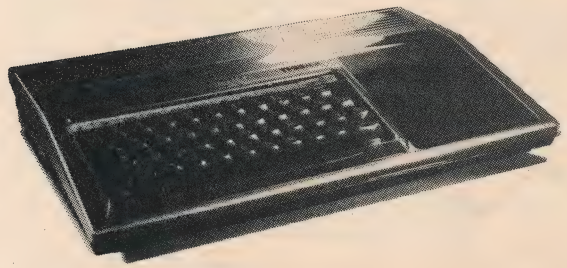

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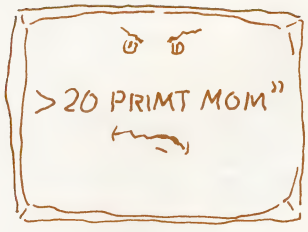
LIST command again, you will see that your new corrected line will now replace the old one in the program. When you're sure your program is correct, RUN it again. It should work. If it doesn't, look again. You've probably made another mistake. Look for little things like a missing quotation mark. Or the PRINT command spelled PRIMT.



Hopefully you now have the program running smoothly. Now let's LIST is again (type LIST and press ENTER) and study it to see how it was constructed.

Except for line 90, you should be able to recognize every command in this program. We've used them all before. We will return to line 90 in a minute, but first take a careful look at the program listing.

You will notice that ten of the lines contain nothing but a line number and the BASIC command PRINT. What do you suppose these lines do? Actually, all they do is serve to skip a line. When the computer sees PRINT with nothing following it, it PRINT's a blank line. Look at line 20. It says PRINT "DEAR MOM,". Line 30 just says PRINT. It leaves a space on your screen between "Dear MOM" and PRESS ENTER FOR". And line 50 leaves a blank line between "PRESS ENTER FOR" and "A MESSAGE (line 60). Lines 130 through line 170 also skip lines. They raise the message "I WENT TO BOB'S HOUSE." higher on the screen. Later you can try removing these lines from the program and see what happens.

Lesson 3

Let's take a quick tour of this program and review what every line is doing. Line 10 clears the screen for the message in lines 20 through 60. Lines 70 and 80 raise the message two lines higher on the screen. Now we come to line 90 which contains a new command. The INPUT command is used to stop the program and wait for the user to supply information. Usually, the computer will then use this information later on. In our case, we are using the command only to make the computer stop and wait, until Mom pushes the ENTER key. The command INPUT is part of a BASIC statement and must be used in conjunction with "something." Here, we have chosen A$. The dollar sign ($) is the symbol used to mean a string. A string is a group of letters between quotation marks. Line 20 contains the string "DEAR MOM,". Although the letters between the quotation marks mean something to us, they mean absolutely nothing to the computer. The computer only understands that we want it to PRINT these letters at a specified time in the program.

Run the program again and watch what happens after the message "Dear Mom, Press Enter for a Message" appears on the screen. Line 90 stops the program and causes a question mark to appear alongside the blinking cursor. The cursor will continue blinking and the question mark will remain in place until someone presses enter.

Line 100 clears the screen to make room for "I WENT TO BOB'S HOUSE." The computer prints this message and then, following the instructions of lines 130 through 170, skips five lines. This you will remember raises our message five lines higher on the screen. Now we have come to the end of our program, line 180. When the computer has completed running our program it automatically prints DONE on the screen. The cursor then jumps to the next line and waits for us to tell the computer what else we might want to do.

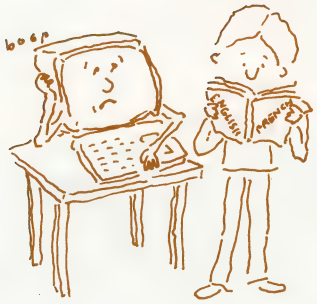
Experiment with this program. Try adding more PRINT lines or taking some out. Change the message or add more messages and more INPUT statements. See what happens if you add or take out some of the CALL CLEAR statements. Experimenting is the best way you can learn. And remember, don't be afraid to hurt the computer. You can't hurt it with anything you type in on the keyboard. In our next issue, we will try making this same program a lot fancier with color and sound. You may be able to make this program fancier yourself if you try. Read the manuals that came with your TI computer and see what you can do. Even if you're not successful, I guarantee you will learn something new about programming while you try. ■

The Junior Programmer

This section of the FAMILY PROGRAMMER is dedicated to those of you who are generally familiar with the keyboard of your TI 99/4A and have experimented some with doing your own programming in BASIC. In each issue we will present a problem to solve and a program that solves the problem. We will try to present programs that you can make some use of as well as learn from. If you have any programs that you think readers of the FAMILY PROGRAMMER might be interested in, please send them along. If our editors agree with you, we may publish your program in a future issue.

Foreign Language Tester

This program can help you with your foreign language vocabulary. The program permits you to enter three pairs of words, each pair containing the foreign word and its English equivalent. After the word-pairs are entered, the program drills you by flashing the foreign word and asking for the English. A wrong answer gets the message "WRONG, TRY AGAIN" and a boop from the computer. When the drill is over, the computer asks you whether or not you want to take the test again.

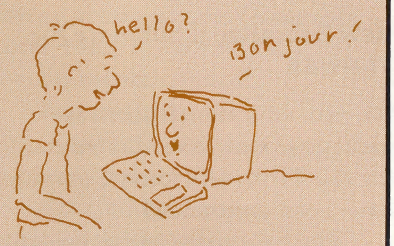


Our "Foreign Language Tester" program has been intentionally presented in a form that leaves much to be desired. The most obvious problem with the program is that it can only test three word-pairs. We want to encourage you to try and solve this problem, along with some others we will point out along the way. Solutions will appear in the next issue of the FAMILY PROGRAMMER.

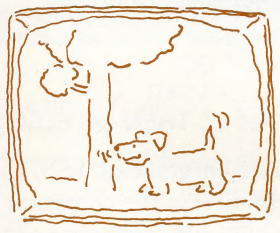
Here's the program in its entirety. Look it over and try to mentally simulate the computer and run it in your head. If you have done some programming before, you have probably tried this technique already. It is an excellent way to learn.

```
LIST
100 CALL CLEAR
110 PRINT "HELLO"
120 PRINT
130 PRINT "I'M HERE TO HELP YOU WITH"
140 PRINT
150 PRINT "YOUR FRENCH."
160 PRINT :::
170 PRINT "PRESS ENTER TO CONTINUE"
180 INPUT S$
190 CALL CLEAR
200 PRINT "ENTER THE FRENCH WORDS"
210 PRINT
220 PRINT "AND THEN THE"
230 PRINT
240 PRINT "ENGLISH TRANSLATION."
250 PRINT :::
260 PRINT "PUT A COMMA IN BETWEEN."
270 PRINT :::
280 PRINT "YOUR ENTRIES SHOULD LOOK"
290 PRINT
300 PRINT "LIKE THIS:"
310 PRINT ::
320 PRINT "BONJOUR, HELLO"
330 PRINT ::::
340 INPUT A$,AA$
350 INPUT B$,BB$
360 PRINT C$,CC$
370 CALL CLEAR
380 "WHEN YOU SEE THE ENGLISH"
390 PRINT
400 PRINT "WORD, ENTER THE"
410 PRINT
420 PRINT "FRENCH TRANSLATION"
430 PRINT :::
440 PRINT "PRESS ENTER TO BEGIN"
450 PRINT :::
460 INPUT D$
470 PRINT ::::::::
480 CALL CLEAR
490 PRINT AA$
500 PRINT ::::::::::::
510 INPUT K$
520 IF K$=A$ THEN 530 ELSE 600
530 CALL SOUND(100,800,0)
540 PRINT ::::::::::::
550 PRINT "RIGHT!"
560 PRINT ::::::::::::
570 PRINT ::::::::::::
580 CALL CLEAR
590 GOTO 650
600 CALL SOUND(100,252,0)
605 PRINT ::
610 PRINT "WRONG, TRY AGAIN"
620 PRINT :::
```

```
630 GOTO 490
640 PRINT ::::::::::::
650 PRINT BB$
660 PRINT ::::::::::::
665 PRINT ::
670 INPUT K$
680 IF K$=B$ THEN 690 ELSE 760
690 CALL SOUND9100,800,0)
700 PRINT ::::::::::::
710 PRINT "RIGHT!"
720 PRINT ::::::::::::
730 PRINT ::::::::::::
740 CALL CLEAR
750 GOTO 800
760 CALL SOUND(100,252,0)
765 PRINT ::
770 PRINT "WRONG, TRY AGAIN"
780 PRINT :::
790 GOTO 650
800 PRINT CC$
810 PRINT ::::::::::::
820 INPUT K$
830 IF K$=C$ THEN 840 ELSE 910
840 CALL SOUND(100,800,0)
850 PRINT ::::::::::::
860 PRINT "RIGHT!"
870 PRINT ::::::::::::
880 PRINT ::::::::::::
890 CALL CLEAR
900 GOTO 950
910 CALL SOUND(100,252,0)
915 PRINT ::
920 PRINT "WRONG, TRY AGAIN"
930 PRINT :::
940 GOTO 800
950 "DO YOU WANT TO TEST"
960 PRINT
970 PRINT "YOURSELF AGAIN?"
980 L$="Y"
990 PRINT :::
1000 PRINT "ENTER (Y=YES, N=NO)"
1010 INPUT G$
1020 CALL CLEAR
1030 IF G$=L$ THEN 490 ELSE 1040
1040 END
```



Now enter the program and let the computer run it. At each input signal enter your word pairs exactly as the example given. If you don't have any foreign vocabulary words to test, you can enter English word pairs such as OAK, TREE or TERRIER, DOG.



Although this program is written with instructions that ask for French words, the computer doesn't know French from Spanish from Greek. The program will obviously work with any words or non-words, for that matter. Now try the test. If you haven't already discovered it in your mental running of the program, you will see that if you cannot come up with the right answer for a word-pair test, you will be forever stuck in a loop. See if you can create a subprogram that gives you a way out after three incorrect guesses.

Program Close-up

We have broken our problem for creating this program into four parts. Part I (lines 100 through 330) tells the user what the program does and explains how to enter the word pairs. Part II (lines 340 through 370) allows the user to enter his word pairs. The three INPUT commands call for the foreign language-English word pairs with a comma in between to separate them. As soon as all three pairs are entered, the computer immediately executes Part III. Lines 490 through 940 of the program is the test, and consists of three subprograms that all do the same thing. But each one does it with a different word or string pair. The three routines are lines 490 through 640; lines 650 through 790; and lines 800 through 940. Let's take a close look at the first of these subprograms to see how they work.

```
490 PRINT AA$
500 PRINT ::::::::::::
510 INPUT K$
520 IF K$=A$ THEN 530 ELSE 600
530 CALL SOUND(100,800,0)
540 PRINT ::::::::::::
550 PRINT "RIGHT!"
560 PRINT ::::::::::::
570 PRINT ::::::::::::
580 CALL CLEAR
590 GOTO 650
600 CALL SOUND(100,252,0)
605 PRINT ::
610 PRINT "WRONG, TRY AGAIN"
620 PRINT :::
630 GOTO 490
640 PRINT ::::::::::::
```

Line 490 instructs the computer to print the English word. Line 500 scrolls the word up to the middle of the screen with the repetitive PRINT command. Line 510 asks for the French word, and line 520 compares the entry with the original entry (the A$ of line 340). If the input matches the original A$, line 520 directs the computer to lines 530, 540 and 550, which beep and display the message "RIGHT!" on the screen. Lines 560 and 570 scroll the message up the screen. Then line 580 clears the screen for the next word. Line 590 directs the computer to line 650, which prints the next English word.

If you input the wrong answer at line 510, the program is constructed to create a retest loop. First a boop sounds (line 600). Then the message "WRONG, TRY AGAIN" is displayed (line 610). Line 630 creates the loop and instructs the computer to return to line 490, which prints the Eng-

lish word on the screen again.

One of the problems with our program is that if you never come up with the right answer you will be forever stuck in this retest loop. Try and see if you can come up with a way to get out of the loop and give the poor user the right answer after three wrong attempts.

Lines 950 through 1030 allow the user to test himself again, if he chooses, or escape the program when he thinks he's had enough.

```
 950 "DO YOU WANT TO TEST"
 960 PRINT
 970 PRINT "YOURSELF AGAIN?"
 980 L$="Y"
 990 PRINT :::
1000 PRINT "ENTER (Y=YES,
N=NO)"
1010 INPUT G$
1020 CALL CLEAR
1030 IF G$=L$ THEN 490 ELSE 1040
```

If the user enters Y or YES, then line 1030 directs the computer back to 490, the beginning of the test. If the user enters N for NO - or anything other than Y as we have written line 1030 - the computer is directed to end the program.

Refinements Coming Up

In our next issue, we are going to add the following features to our language tester program: 1. a method to allow the entry of additional word pairs. 2. A way out of the retest loop, where the user is given the correct answer. 3. A way to save the words entered for testing at another time and 4. A way to reverse the words so the user can test himself from either English to the foreign language or from the foreign language to English. ■

New Texas Instruments Home Computer Products Announced

Continued from page 1

load quickly into your computer, and the computer can search and find a particular program on the tape instead of you. The Wafertapes also rewind and fast forward more quickly than conventional cassettes. Although not as powerful or versatile as a disk drive, the Wafertape drive is a whole lot cheaper with a suggested retail price of $140.00. Also available for the CC-40 or to use with your 99/4A are a small four-color printer/plotter, and a new low cost modem for telephone communications. 99/4A owners must buy a Hex-bus™ Interface to use any of the new Hex-bus™ peripherals.

New CC-40 Software

TI is also announcing new software for its new compact computer. The two new products come on solid state cartridges that plug directly into the CC-40. The new programs are *Chemical Engineering*, which is designed for the engineering student or professional and includes formulas to estimate specific heat, latent heat of vaporization, critical properties of compounds, and other chemical properties and *Mathematics II*, which covers a variety of applications, including integration, real and complex roots, nonlinear systems and geometric figures. *Mathematics II* also includes symbolic integration, differentiation, expansion and reduction of polynomials, and trigonometric formulas.

New TI 99/4A Software

TI-Mini-Writer Cassette

TI is announcing a new cassette-based "mini" word processing program for use with the TI-99/4A.

The *TI-Mini-Writer*, developed by Model Masters, Inc., provides full screen text editing, a 24 x 40 character window on an 80 character line, 9500 stored characters per file, upper and lower case characters, movable copy, and an add or delete function for characters or lines. The package also includes a search function; up, down, left, or right scrolling; text buffer purging, and cancel commands.

The Ti-Mini-Writer is designed to be used with a TI-99/4A Home Computer with a 4K RAM Mini Memory. The system also requires a cassette recorder and cable, and an RS232 interface and printer are recommended.

The TI-Mini-Writer is expected to be available this fall at a suggested retail price of $19/95.

New Educational Software for TI-99/4A

Six new educational software packages from Texas Instruments for the TI-99/4A Home Computer have been announced.

The new software is available from Texas Instruments in Solid State Software™ format.

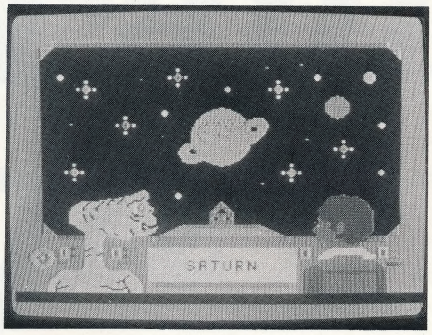
Early LOGO Learning Fun is a selection of the best LOGO procedures developed by the Lamplighter School in Dallas, Texas. The package includes five different activities: "Build," "Park," "People," "Draw," and "Dallas," in which children ages 3-6 can use the LOGO computer language and such basic words as Forward, Back, Left, and Right to make colorful graphical events occur on the screen. (Available in July 1983; Suggested retail prices $39.95.)

Also new are three E.T.-based educational software games, developed by Looking Glass Software, Inc.:

E.T. And His Adventures On Land for children ages 3-6, is a graphic learning game where the player helps E.T. return home. E.T. and Elliott learn about characteristics of various animals as they try to reach the "mother ship" at the forest, mountain, or desert landing sites. The game includes two levels of difficulty and a strategy game packed with action and colorful animation. (Available Winter 1983; Price $39.95; Joysticks recommended.)

The E.T. and His Adventures In Air learn-through-play educational game for ages 7-10 lets the player explore basic physics concepts and astronomy terms through activities including a hot air balloon simulation and space travel in E.T. and Elliott's space shuttle. Adventures include mapping the solar system and various space challenges in strategy action games. (Available Winter 1983; Price $39.95; Joysticks recommended.)

The remaining two educational software packages were prepared for and manufactured by Texas Instruments under license from Developmental Learning Materials, Inc. (DLM)



A scene from *E.T.* and His Adventures In Air.

Word Radar provides players of all ages with a motivating and challenging means of practicing recognition and discrimination skills with a basic vocabulary. Players are control tower operators who must scan words in four quadrants for a few seconds before the words disappear. Players must then scan the four quadrants with a radar beam to locate words that match the word at the bottom of the screen. This game features fast action, colorful graphics, and an exciting arcade game format. (Available winter 1983; Price $39.95; Joysticks recommended.)

In *Word Invasion* a friendly alien octopus protects her underwater territory from a screen full of invading words with a magic ring that moves from arm to arm, firing at approaching words. To fire, the player must match the appropriate word with the part of speech that appears below the alien octopus. Players practice identifying the six major parts of speech in this DLM game featuring fast action, colorful graphics, and an arcade game format designed to motivate children and to teach them language skills. (Available Winter 1983; Price $39.95; Joysticks recommended.)

New Arcade Game Software for TI-99/4A

Four new software games, two developed by TI and two developed for TI by third-party sources, are available for the 99/4A Home computer from Texas Instruments and were displayed at the 1983 Summer Consumer Electronics Show in Chicago.

The games include three Texas Instruments games on Solid State Software™ cartridges, M*A*S*H, Sneggit, and Moonmine. The M*A*S*H game was developed by TI under license from Fox Video Games Inc. The fourth game, Entrapment, is available on cassette and is manufactured by TI under license from American Software Design & Distribution Company.

In *M*A*S*H* players must pick up wounded soldiers from a battlefield and airlift them to the 4077th M*A*S*H unit. Players must move quickly to save as many lives as possible. A hawk's eye and a steady hand will help the players sew up the highest score. (Available Fall 1983; Suggested retail price $39.95; Joysticks recommended.)

In *Sneggit*, players control a chicken that guards eggs from hungry snakes. Fast reflexes, wit, and skillful tactics help players save the eggs from the snakes devouring them by the dozens. The more eggs saved, the higher the score. (Available third quarter; Price $39.95; Joysticks recommended.)

In the new *Moonmine* game you are the captain of the U.S.s. Moonmine, and your mission is to capture treasures stolen from earth. Players battle against Mighty Zygonaught and his menacing creatures to save the world's most valuable treasures. This one-player game challenges

Continued on page 12

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New Software

Continued from page 11

your skills in strategic planning and quick thinking. Moonmine includes various levels of difficulty and synthetic speech capabilities. (Available Winter 1983; Price $39.95; Joysticks and Speech Synthesizer recommended.)

In *Entrapment*, a cassette-based game, players are in command of the spaceship that patrols the earth's atmosphere. Suddenly, hostile larvae are entering the atmosphere to attack the earth. One by one they turn into ravenous insects, and players must destroy as many insects as possible while building a shield to ward off surviving attackers. this game requires the TI-Mini Memory cartridge and a cassette tape recorder. (Available Fall 1983; Price $19.95; Joysticks recommended.)

MBX Voice Recognition System for 99/4A

Texas Instruments is announcing the availability of the Milton Bradley MBX™ Expansion System for use with its 99/4A Home Computer. The system, which is the only system providing voice recognition available for a home computer, will work with 10 software packages developed by Milton Bradley.

The MBX Expansion System will be available in the Winter of

1983 at a suggested retail price of $129.95. The additional multi-functional joystick has a suggested retail price of $29.95.

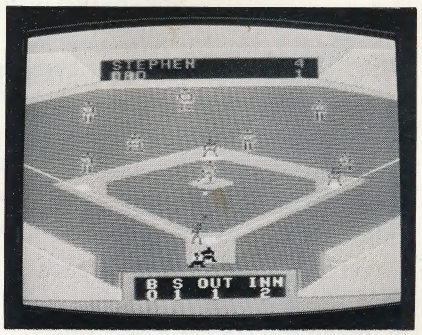
New Milton Bradley Software for TI-99/4A and MBX Expansion System

Ten software packages are being announced by Texas Instruments for use with the TI-99/4A and the Milton Bradley MBX™ Expansion System with voice recognition.

In *Terry Turtle's Adventure*™ players can actually tell Terry how to get home, and then watch him obey and talk back. Children can guide Terry through a changing landscape as they learn elementary programming and education concepts. Ten basic commands keep the game simple for young children. The MBX Expansion System is required.

In *Meteor Belt* ™ players and their computer co-pilot do battle against enemy ships in this daring space duel. Players must be fast to destroy meteors and rival spaceships in this quick-moving shoot- em-up game.

Championship Baseball ™ features real life action as a computer umpire calls out the plays. Players make up team names for the scoreboard, and can control player movements by individual names or position sthrough voice recognition. the umpire calls balls and strikes, the computer plays realistic ballpark music, and players move into position on the field.



Milton Bradley *Championship Baseball.*

In *I'm Hiding*™ children try to find the location of bugs hiding in a crayon box as the bugs play peek-a-book. Children can hear the bugs call out clues to let the children know whether they are hot or cold. The MBX keypad helps the children to deduce hiding places. ■